

## Do You Know?

### Set 1

1. Does the bug always move to a new location? Explain.

No, the bug only move to a new location only if the location is in the grid and is empty or is occupied by flower.

2. In which direction does the bug move?

The bug always move forward if there is no rock.

3. What does the bug do if it does not move?

The bug turns 45 degree to right continuously.

4. What does a bug leave behind when it moves?

It leave a flower as the same color as the bug.

5. What happens when the bug is at an edge of the grid? (Consider whether the bug is facing the edge as well as whether the bug is facing some other direction when answering this question.)

When the bug is told to act it turns 45 degrees to the right and moves forward to a new location when told to move.

6. What happens when a bug has a rock in the location immediately in front of it?

The bug turn 45 degrees to the right.

7. Does a flower move?

No

8. What behavior does a flower have?

The flower changes the color from the color same as the bug to the gray.

9. Does a rock move or have any other behavior?

No, a rock does not move and have not other behaviors.

10. Can more than one actor (bug, flower, rock) be in the same location in the grid at the same time?

No, a location only only contains one actor at same time.

## Exercises

By clicking on a cell containing a bug, flower, or rock, do the following.

1. Test the setDirection method with the following inputs and complete the table, giving the compass direction each input represents.

### Degrees Compass Direction

0	North
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45	North East
90	East
135	East South
180	South
225	South West
270	West
315	West North
360	North

2. Move a bug to a different location using the `moveTo` method. In which directions can you move it? How far can you move it? What happens if you try to move the bug outside the grid?

Using the `moveTo` method a bug can move to any empty location inside the grid and it would change its original direction except using the `setDirection` method or `turn` method. When I try to move the bug outside the grid, I get a `java.lang.IllegalArgumentException` exception.

3. Change the color of a bug, a flower, and a rock. Which method did you use?

Using the `setColor` method.

4. Move a rock on top of a bug and then move the rock again. What happened to the bug?

When a rock is moved to on top of a bug, the bug disappears, and when move the rock a again the bug does not exist there any longer inside the grid.